

IN THE CLAIMS:

Please cancel Claims 72 and 76 without prejudice to or waiver of the subject matter contained therein.

Please amend Claims 71, 75, 79 and 82 and add Claims 86-88 as follows. All claims currently pending in this application have been reproduced below.

Claims 1- 70 were previously cancelled.

71. (Currently Amended) A diffractive optical element, which is used for an optical system of an exposure apparatus, said diffractive optical element comprising:

an effective area;

a peripheral area surrounding the effective area; and

a light-shielding member composed of a laminated layer of Cr oxide and Cr disposed on a surface of the peripheral area, wherein said light-shielding member comprises an alignment mark.

72. (Cancelled)

73. (Original) An exposure apparatus for exposing a wafer to a pattern of a mask by using said optical system including said diffraction grating optical element according to Claim 71.

74. (Original) A device manufacturing method comprising:  
a step of exposing a wafer to a device pattern of a mask by the exposure apparatus according to Claim 73; and  
a step of developing the exposed wafer.

75. (Currently Amended) A diffractive optical element, which is used for an optical system of an exposure apparatus, said diffractive optical element comprising:  
an effective area;  
a peripheral area surrounding the effective area; and  
a light-shielding member composed of a material selected from the group consisting of TiC, TiN, ZrC, HfC and HfN, disposed on a surface of the peripheral area, wherein said light-shielding member comprises an alignment mark.

76. (Cancelled)

77. (Original) An exposure apparatus for exposing a wafer to a pattern of a mask by using said optical system including said diffractive optical element according to Claim 75.

78. (Original) A device manufacturing method comprising:  
a step of exposing a wafer to a device pattern of a mask by the exposure apparatus according to Claim 77; and  
a step of developing the exposed wafer.

79. (Currently Amended) A diffractive optical element, which is used for an optical system of an exposure apparatus, said diffractive optical element comprising:

an effective area;

a peripheral area surrounding the effective area; and

a light-shielding member composed of an acrylic or epoxy light-shielding ink disposed on a face of the peripheral area, and comprising an alignment mark used when arranging said light-shielding member into said optical system, wherein said light-shielding ink is not exposed to an outside of the diffractive optical element.

80. (Original) An exposure apparatus for exposing a wafer to a pattern of a mask by using said optical system including said diffractive optical element according to Claim 79.

81. (Original) A device manufacturing method comprising:

a step of exposing a wafer to a device pattern of a mask by the exposure apparatus according to Claim 80; and

a step of developing the exposed wafer.

82. (Currently Amended) A diffractive optical element, which is used for an optical system of an exposure apparatus, said diffractive optical element comprising:

an effective area;

a peripheral area surrounding the effective area; and

a light-shielding member composed of any one of (i) chromium, aluminum, molybdenum, tantalum and tungsten, (ii) a laminated structure of any one of chromium,

aluminum, molybdenum, tantalum or tungsten and any one of chromium oxide, silicon oxide or aluminum oxide, (iii) a compound material of a metal and silicon, and (iv) a compound of any one of molybdenum or tungsten and silicon, silicon, or titanium oxide, disposed on a face of the peripheral area, wherein said light-shielding member comprises an alignment mark.

83. (Original) A diffractive optical element according to Claim 82, wherein a wavelength of light used for the exposure is less than 250 nm.

84. (Original) An exposure apparatus for exposing a wafer to a pattern of a mask by said optical system including said diffractive optical element according to Claim 82.

85. (Original) A device manufacturing method comprising:  
a step of exposing a wafer to a device pattern of a mask by the exposure apparatus according to Claim 84; and  
a step of developing the exposed wafer.

[ Please add Claims 86-88 as follows: ]

--86. (New) A diffractive optical element comprising:  
an effective area;  
a peripheral area surrounding the effective area; and

a light-shielding member disposed on a surface of the peripheral area, wherein said light-shielding member comprises an alignment mark.

87. (New) An exposure apparatus for exposing a wafer to a pattern of a mask by using an optical system including a diffractive optical element according to Claim 86.

88. (New) A device manufacturing method comprising:  
a step of exposing a wafer to a device pattern of a mask by using an exposure apparatus according to Claim 87; and  
a step of developing the exposed wafer.--

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